

STL - St. Louis

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
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00722.33

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

February 16, 2000

Attention: Joan Kessner

RECEIVED
APR 11 2000

EDMC

Project Number	:	34313
SDG	:	W03032
Number of Samples	:	two (2)
Sample Matrix	:	water
Data Deliverable	:	Summary
Date SDG Closed	:	February 9, 2000

II. Introduction

On January 26, 2000, two (2) "water" samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria. See the attached Sample Summary sheet for the client and lab Ids for these samples.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested: VOA - 8240 GCMS: List-1 (33)

Deviation from Request: There were no deviations.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
MSD- Matrix Spike Duplicate.

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February 16, 2000
Project Number: 34313
SDG: W03032
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V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Volatiles: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

There are no comments or non-conformances associated with the Volatiles data.

I certify that this Data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

A handwritten signature in black ink, appearing to read "Marti Ward", written over a horizontal line.

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F0A270224

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
D7XR6	001	BOWKT8	01/26/00	07:45
D7XRJ	002	BCWKT0	01/26/00	08:50

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

FOA270224

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Volatile Organics by GC/MS	SW846 8240A	SW846 8240A

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

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QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 1/27/00
Time: 16:07:21
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: INTERIM MONITOR
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: C00-002
AMOUNT REC'D: 3X40
STORAGE LOC: ~~VIA~~ *VIA 8/127-00*
LOT COMMENTS: Hanford Package and EDD requirements app
MATRIX: WATER
SAMPLE ID: B0WKT8
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 34313
LAB ID: F-0A270224-001
WORK ORDER: D7XR6
RECEIVING DATE: 1/27/00
SAMPLING DATE: 1/26/00
ANALYTICAL DUE DATE: 2/25/00N
REPORT DUE DATE: 3/11/00
PRIORITY: 30
SAMPLING TIME: 7:45
RECEIVING TIME: 8:30
SDG# : W030³²~~27~~

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8240)	06	1/27/00	0/00/00	2/09/00
PURGE AND TRAP - 5 mL purge				
STL: HANFORD 8240 GCMS:LIST-1(33)				
(I-15-FB-5I) D7XR6-1-01 Protocol: A				
QC Program: CLIENT: HANFORD				

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QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 1/27/00
Time: 16:07:21
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: INTERIM MONITOR
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: C00-002

QUOTE/SAR #: 34313
LAB ID: F-0A270224-001-D
WORK ORDER: D7XR6 MSD
RECEIVING DATE: 1/27/00
SAMPLING DATE: 1/26/00
ANALYTICAL DUE DATE: 2/25/00N
REPORT DUE DATE: 3/11/00
PRIORITY: 30

AMOUNT REC'D: 3X40
STORAGE LOC: *VIA VIA SW 127-00*

LOT COMMENTS: Hanford Package and EDD requirements app
MATRIX: WATER
SAMPLING TIME: 7:45
RECEIVING TIME: 8:30

SAMPLE ID: BOWKT8

QC PACKAGE: Special Report - see checklist

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SDG# : W03027

SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
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Volatile Organics, GC/MS (8240)	06	1/27/00	0/00/00	2/09/00
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PURGE AND TRAP - 5 mL purge

STL: HANFORD 8240 GCMS:LIST-1(33)

(I-15-FB-5I) D7XR6-1-03 Protocol: A QC Program: CLIENT: HANFORD

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QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 1/27/00
Time: 16:07:21
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: INTERIM MONITOR
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: C00-002

QUOTE/SAR #: 34313
LAB ID: F-0A270224-001-S
WORK ORDER: D7XR6 MS
RECEIVING DATE: 1/27/00
SAMPLING DATE: 1/26/00
ANALYTICAL DUE DATE: 2/25/00N
REPORT DUE DATE: 3/11/00
PRIORITY: 30

AMOUNT REC'D: 3X40

STORAGE LOC: ~~YAS~~ *VIA SW 1-27-00*

LOT COMMENTS: Hanford Package and EDD requirements app SAMPLING TIME: 7:45

MATRIX: WATER

RECEIVING TIME: 8:30

SAMPLE ID: BOWKT8

QC PACKAGE: Special Report - see checklist

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SDG# : W03017

SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

***** ANALYSIS *****

WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
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Volatile Organics, GC/MS (8240)

06	1/27/00	0/00/00	2/09/00
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PURGE AND TRAP - 5 mL purge

STL: HANFORD 8240 GCMS:LIST-1(33)

(I-15-FB-SI) D7XR6-1-02 Protocol: A QC Program: CLIENT: HANFORD

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QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 1/27/00
Time: 16:07:21
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: INTERIM MONITOR
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: C00-002
AMOUNT REC'D: 3X40
STORAGE LOC: *VIA 8/1/27-07*
LOT COMMENTS: Hanford Package and EDD requirements app
MATRIX: WATER
SAMPLE ID: BOWKT0
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 34313
LAB ID: F-0A270224-002
WORK ORDER: D7XRJ
RECEIVING DATE: 1/27/00
SAMPLING DATE: 1/26/00
ANALYTICAL DUE DATE: 2/25/00N
REPORT DUE DATE: 3/11/00
PRIORITY: 30
SAMPLING TIME: 8:50
RECEIVING TIME: 8:30
SDG# : W0301³²

Beginning Depth: .00 Ending Depth: .00

	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
***** ANALYSIS *****				
Volatile Organics, GC/MS (8240)	06	1/27/00	0/00/00	2/09/00
PURGE AND TRAP - 5 mL purge				
STL: HANFORD 8240 GCMS:LIST-1(33)				
(I-15-FB-5I) D7XRJ-1-01 Protocol: A				
QC Program: CLIENT: HANFORD				

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020715

Condition Upon Receipt Variance Report
St. Louis Laboratory

Login No.: FOA270224
W03032

Client: PNNLDate: 1-27-00 Time: 830Project No: 34313Initiated by: Sue H 802Shipper/No: Carbone 402605914RFA/COC Numbers: C00-002-26

Condition/Variance (Check all that apply):

C00-002-16

- | | |
|--|--|
| 1. <input type="checkbox"/> Sample received broken/leaking. | 8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____ |
| 2. <input type="checkbox"/> Sample received without proper preservative. | |
| <input type="checkbox"/> Cooler temperature not within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ | |
| Record temperature: _____ | |
| <input type="checkbox"/> pH _____ | 9. <input type="checkbox"/> All coolers on airbill not received with shipment. |
| <input type="checkbox"/> other: _____ | 10. <input type="checkbox"/> Other (explain below): _____ |
| 3. <input type="checkbox"/> Sample received in improper container. | |
| 4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____ | |
| 5. <input type="checkbox"/> Paperwork received without sample. | |
| 6. <input type="checkbox"/> No sample ID on sample container. | |
| 7. <input type="checkbox"/> Custody tape disturbed/broken/missing. | |

☒ No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 4°

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: did not receive rad screen for BOWKT8.

Corrective Action:

- ☐ Client's Name: _____ Informed verbally on: _____ By: _____
- ☐ Client's Name: _____ Informed in writing on: _____ By: _____
- ☐ Sample(s) processed "as is".
- ☐ Comments: _____ If released, notify: _____
- ☐ Sample(s) on hold until: _____

Sample Control Supervisor Review: (or designate) Sue H 802 Date: 1-27-00Project Management Review: MWand Date: 1-27-00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 12/12/98

BECHTEL HANFORD, INC.

Client Sample ID: BOWKT8

GC/MS Volatiles

Lot-Sample #....: FOA270224-001 Work Order #....: D7XR6101 Matrix.....: WATER
 Date Sampled....: 01/26/00 Date Received...: 01/27/00
 Prep Date.....: 02/02/00 Analysis Date...: 02/02/00
 Prep Batch #....: 0035170
 Dilution Factor: 1 Method.....: SW846 8240A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	7.0 J,B	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	1.0 J	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethene	ND	5.0	ug/L
(total)			
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	ND	5.0	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Bromofluorobenzene	94	(69 - 113)	
Toluene-d8	104	(68 - 132)	
1,2-Dichloroethane-d4	104	(72 - 147)	

(Continued on next page)

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BECITEL HANFORD, INC.

Client Sample ID: B0WKT8

GC/MS Volatiles

Lot-Sample #....: F0A270224-001 Work Order #....: D7XR6101 Matrix.....: WATER

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

STL - St. Louis

BECHTEL HANFORD, INC.

B0WKT8

GC/MS Volatiles

Lot-Sample #: FCA270224-001

Work Order #: D7XR6101

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
UNKNOWN		14	M 23.023	ug/L

NOTE(S) :

M: Result was measured against nearest internal standard assuming a response factor of 1.

BECHTEL HANFORD, INC.

Client Sample ID: B0WKTO

GC/MS Volatiles

Lot-Sample #....: FOA270224-002 Work Order #....: D7XRJ101 Matrix.....: WATER
 Date Sampled....: 01/26/00 Date Received...: 01/27/00
 Prep Date.....: 02/02/00 Analysis Date...: 02/02/00
 Prep Batch #....: 0035170
 Dilution Factor: 1 Method.....: SW846 8240A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachloride	34	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethene (total)	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	ND	5.0	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	96	(69 - 113)	
Toluene-d8	106	(68 - 132)	
1,2-Dichloroethane-d4	102	(72 - 147)	

STL - St. Louis

BECHTEL HANFORD, INC.

B0WK10

GC/MS Volatiles

Lot-Sample #: F0A270224-002

Work Order #: D7XRJ101

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
UNKNOWN		12	M 23.005	ug/L

NOTE(S) :

M: Result was measured against nearest internal standard assuming a response factor of 1.

Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

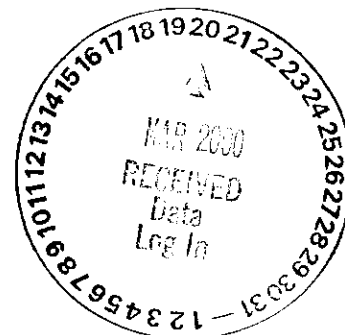
509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

March 19, 2000

Attention: Joan Kessner



SAF Number	:	C00-002
Date SDG Closed	:	February 9, 2000
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W03032
Data Deliverable	:	45 Day / Summary

I. Introduction

On January 26, 2000, one water sample was received at the Quanterra Richland Laboratory (QRL) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

<u>QRL ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9D7WX010	B0WKTO	WATER	1/26/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Liquid Scintillation Counting
Technetium-99 by method RICH-RC-5065
Total Uranium
Total Uranium by method RICH-RC-5058

Bechtel Hanford, Inc.
March 19, 2000
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III. Quality Control

The analytical results for each analysis performed under SDG W03032 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Liquid Scintillation Counting

Technetium-99 by method RICH-RC-5065:

The LCS, batch blank, sample, sample duplicate (B0WKT0) and sample matrix spike (B0WKT0) results are within contractual requirements.


Total Uranium

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, sample, sample duplicate (B0WKT0) and sample matrix spike (B0WKT0) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:



Jackie Waddell
Project Manager

SAMPLE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: 9D7WX010 MATRIX: WATER
CLIENT ID: B0WKTO DATE RECEIVED: 1/26/2000 3:00:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	7.71E+02		1.4E+01	6.6E+01	1.24E+01	pCi/L	100.00%	RICHRC5078
TOTAL-URANIUM	2.15E+02		0.0E+00	3.5E+01	7.29E-02	ug/L		RICHRC5058

Number of Results:

DUPLICATE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D7WX014R MATRIX: WATER
CLIENT ID: B0WKT0 DUP DATE RECEIVED: 1/26/2000 3:00:00 P
ORIG LAB SAMPLE ID: 9D7WX010

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TC-99	7.83E+02		1.4E+01	6.7E+01	1.23E+01	pCi/L	100.00%	RICHRC5078	7.71E+02	1.58%

Number of Results:

DUPLICATE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D7WX016R MATRIX: WATER
CLIENT ID: B0WKTO DUP DATE RECEIVED: 1/26/2000 3:00:00 P
ORIG LAB SAMPLE ID: 9D7WX010

ANALYTE	DUP RESULT	COUNTING Q ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TOTAL-URANIUM	2.22E+02	0.0E+00	3.6E+01	7.29E-02	ug/L		RICHRC5058	2.15E+02	2.93%

Number of Results:

BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D8J0411B MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	-1.63E+00	U	8.6E-02	1.1E+01	1.23E+01	pCi/L	100.00%	RICHRC5078

Number of Results:

BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D8J0611B MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TOTAL-URANIUM	4.66E-02	U	0.0E+00	1.1E-02	7.29E-02	ug/L		RICHRC5058

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D8J0412S MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
TC-99	5.47E+02		1.1E+01	5.0E+01	1.23E+01	pCi/L	100.00%	5.43E+02	100.75%

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D8J0612S MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
TOTAL-URANIUM	8.79E-01		0.0E+00	1.4E-01	7.29E-02	ug/L		9.07E-01	96.88%

Number of Results:

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D7WX013W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	4.03E+03	3.2E+01	3.0E+02	1.24E+01	pCi/L	7.71E+02	3.63E+03	110.84%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadMatrixSpike; v3.41

0011

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03032 / 10072
LAB SAMPLE ID: D7WX015W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TOTAL-URANIUM	3.05E+02	0.0E+00	7.3E+01	7.29E-02	ug/L	2.15E+02	9.05E+01	337.06%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadMatrixSpike; v3.41

0012

[illegible]

PNNL		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # C00-002-26	
								Page 1 of 1	
Collector K. Young			Contact/Requester JH KESSNER			Telephone No. MSIN FAX (509) 375-4688			
SAF No. C00-002			Sampling Origin HANFORD SITE			Purchase Order/Charge Code			
Project Title 2001UPHAM GW MONITORING, OCTOBER 1999			Logbook No. WM-SML H 30, PAGE 89			Ice Chest No. SML 560 Temp.			
Shipped To (Lab) Quanterra Incorporated			Method of Shipment GOVT. VEHICLE			Bill of Lading/Air Bill No.			
Protocol CERCLA			Data Turnaround 45 Days			Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** SDG W03032 JOA270 144						SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FAX copies of QES log-in to DL Stewart (372-1704) & JH Kessner (372-9487)			
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis		Preservative	
BOWKT8		W	01-26-00	0745	3x40-mL aGs*	8240_VOA_GC/MS: List-1 (33)		HCl or H2SO4 to pH <2 Cool 4C	
BOWKT8		W			1x20-mL P.	Activity Scan		None	
Relinquished By	Print	Sign	Date/Time	1500	Received By	2100 CPM	Sign	Date/Time	1500
K. Young			01-26-00		ABW Krentz			01-26-00	
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	
Relinquished By			Date/Time		Received By			Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time	